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The Surgical Treatment of Bursitis of the Equine Poll and Withers

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This communication comprises a record of 18 cases of bursitis of the poll or withers in the horse treated by operation during the period September, 1941, to February, 1945, and dealt with by the writer in consultation with veterinary surgeons practising in Cheshire, Lancashire and North Wales, in the School hospitals. At the time of operation the lesions were either closed or had recently burst. Two cases which had been open for several months and were grossly complicated by pyogenic infection were destroyed as hopeless soon after operation and are not included. Nine other cases have been dealt with since the period under review but insufficient time has elapsed to assess the results in these. It is hoped to make them a feature of a later report.

The object of the communication is to describe firstly, the nature of the primary lesion; secondly, the type of operation performed, its objective, technique and after-treatment; and finally, the outcome.

Of the animals involved, 15 were cart horses, one was a Welsh cob, one a hunter and one a thoroughbred. Twelve were mares and six were geldings, while their ages varied from 3 to about 15 years. All were from farms. In nine the poll was involved; eight were of the withers and in one both poll and withers were affected. Twelve of the lesions were closed at the time of operation and had been in existence for variable periods up to more than a year, while seven were open. In the open cases the histories indicated that they had burst from two days to about three weeks previously, and the comparative absence of pain and suppuration signified that pyogenic infection was not severe.

NATURE OF THE LESION

The description of the lesion which follows is based on the findings at operation in closed cases. The primary lesion is a deep-seated one involving the atlantal or supraspinous bursa. The bursal wall is thickened, covered by granulation tissue and deeply congested, while the lumen is occupied by exudate. This exudate is of the sero-flocculent type comprising transparent fluid, light to dark brown in colour, in which are present large numbers of floccules of fibrin and cells. Generally these floccules have the appearance of boiled rice grains but sometimes they comprise flakes. Accumulation of exudate in the bursa causes it to become distended in both the sagittal and lateral planes. In the case of the poll lesion, its length in the antero-posterior direction is often from 5 to 7 inches, extending from the occipital bone to the spine of the axis, while laterally it extends beneath the funicular portion of the nuchal ligament and between complexus and dorsal straight muscles of the head, to a distance of 2 to 3 inches. In the withers lesion, similar primary distension of the bursa occurs but penetration tends to be forwards and downwards in the mid-line in the direction of the first dorsal spinous process. In long-standing cases there may be considerable lateral penetration also; on either side of the dorsal spinous processes between the longissimus dorsi and complexus muscles and between the levator anguli scapulae muscle and the cartilage of prolongation of the scapula. Exudation is profuse and as its quantity soon exceeds the accommodation available in the bursa, it escapes, generally through the dorsal surface of the bursa by one or more narrow and often tortuous channels. In both poll and withers lesions the direction of these channels may be upwards between the two parts of the funicular portion of the ligament, or lateral through the substance of the ligament or between it and the muscles beneath. In this manner exudate attains a more superficial focus where loose connective tissue allows of greater distension and the visible lesion develops. (Figures A and C illustrate the normal anatomy of the parts and B and D the various routes of escape of exudate from the bursae.) An exceptional sequel to the withers lesion is that exudate escapes from the bursa in the forwards and downwards direction, penetrating the lamellar portion of the ligament and eventually attaining a superficial focus low down on the neck in front of the anterior border of the scapula.

Thus it will be appreciated that the primary lesion is in the midline the ultimate, superficial one may be unilateral or bilateral; more often the latter. When the escape of exudate from the bursa is upwards, the dorsal contour of the part becomes raised (photograph 1 and photograph 3, poll lesion); when, however, it is lateral, swelling is confined to the sides of the poll or withers (photograph 3, withers lesion).

A striking feature of the closed lesion is the comparative absence of pain and in the majority of instances the animal is in good condition. But eventually the superficial lesion bursts through the skin, on one or both sides, and the greater part of the exudate escapes. The period elapsing between the onset of the visible lesion and bursting and also the degree of distension attained before bursting, vary greatly. In some a closed lesion with gross distension has been in existence for a year or more while in others the history of an open case is that abnormality was first observed a month or two before. Once the lesion is open there is a grave risk that the whole of the affected tissues will become invaded by pyogenic organisms and the course of the condition be entirely altered. This is especially liable to occur in withers cases and it is thought that movement is an important factor in determining the extent of pyogenic invasion. The lesion becomes acutely painful; there is marked inflammatory swelling, and despite maintenance of appetite, loss of flesh is rapid. In these cases necrosis readily extends from the bursa to the bone beneath and cases have been encountered in which suppuration had spread deeply into the spinous processes. By this time the animal is beyond surgical aid and should be destroyed.

(*For photographs and figures see succeeding pages*)

The Operative Interference

Its nature.—In the writer's conception, the aims of operation are twofold; the first, to expose completely the diseased focus so that progressive healing from its depth by granulation and cicatrization can occur, and the second, to control effectively post-operative pyogenic infection. To do the first it is necessary to remove the nuchal ligament, muscle and other fibrous structures which cover the distended bursa, the roof of the bursa being removed with them. As regards the second, the introduction of the sulphonamides as wound dressings has made this possible in the horse. It may be said that exposure of the bursa by incision only is all that is necessary. Theoretically this may be so but in fact the tension of the overlying ligament is so great that effective dressing of the bursa is impossible unless the latter is removed. The provision of lateral drainage is generally necessary in those cases in which there is marked superficial pocketing for otherwise adequate dressing of these pockets may later be difficult when the dorsal cavity is becoming filled by granulation.

By these means lesions may be completely healed in a period of 42 days without post-operative suppuration, malaise or severe pain, although the majority take eight to ten weeks.

TECHNIQUE

Whenever possible the operation site should be prepared before the animal is cast for it is important that "anaesthetic time" shall not be consumed by these preliminaries. The animal is cast, restrained on its side and deep narcosis induced by the intravenous injection of chloral hydrate. The dose employed varies from 5 to 6 grammes per cwt. according to the size and condition of the animal. When operating at the poll, the animal's head is raised on a pillow while when concerned with the withers it is an advantage to have support under the head and neck and the latter flexed slightly so that the withers and crest are in a straight line. The skin of the primary incision is infiltrated with local anaesthetic solution taking care that the area anaesthetized extends well in front of and behind the visible lesion. Infiltration is made by a succession of some eight to ten injections commencing at the posterior part and using 2·5 per cent. procaine hydrochloride solution with adrenaline. A 20 c.c. "Record" syringe fitted with a 19-gauge needle, 5 cm. long, is suitable. Care must be taken that the point of the needle lies immediately subcutaneous and not in the fibro-fatty tissue beneath for otherwise the resistance offered will make effective injection impossible. Even subcutaneous infiltration is not easy. About 8 c.c. are injected at each point.

A longitudinal incision is made through the skin; its length in the majority of instances will be about 8 inches but in large, closed

cases it may require to be 12 inches or more. It is important that the primary incision shall extend well in front of and behind the limits of the bursa. Incision is continued through the fibro-fatty crest to a depth of about 2 inches. In those cases in which perforation of the *ligamentum nuchae* has been directly upwards the superficial cavity has now been entered and exudate escapes. The reaction of the inexperienced operator may now be—the lesion is a superficial one and all that remains to be done is the provision of lateral drainage: it has been quite simple. But on further examination of the floor of the cavity, a channel into which a finger can be inserted will be found penetrating the ligament and connecting up with the bursa some 1½ inches below. There may be several such channels. At this point an inhalation mask should be applied and chloroform administered, for subsequent interference with the ligament is a painful procedure which neither the narcosis present nor the infiltration will completely control. The primary wound is dilated by traction applied to vulsellum forceps and incision continued deeply into the bursa. Fingers are inserted to ascertain its extent in all directions and incision of the ligament in the forward and backward directions is continued until the limits of the bursa are exposed. Up to this point haemorrhage has not been excessive and frequent swabbing has served to keep the various tissues in view. Commencing on the uppermost side, the ligament is gripped with vulsellum forceps and severed in the lateral direction at the anterior and posterior limits of the bursa. This portion of the ligament together with the roof of the bursa which is attached to its under surface and its laterally attached muscle and fascia, are excised (Figures B and D). Haemorrhage is now profuse for two or three large arteries have been cut. These should be picked up with Spencer Wells forceps. The next consideration is the provision of lateral drainage. Whether or not it is required will depend on the extent of lateral pocketing. The most dependant part of the lateral cavity is located and the skin, fascia and muscle over it incised to a length of 3 to 4 inches parallel with the primary incision. Completion of the operation necessitates the same procedure on the other side and in most cases it is an advantage to turn the animal over before continuing. Before doing so, however, the wound already made should be packed with swabs for bleeding is still copious. The ligament on the opposite side is now dealt with. Finally, after vigorous swabbing, the whole of the exposed tissues are freely dusted with sulphanilamide, the cavity packed tightly with gauze tampons and the skin incision drawn together with three or four interrupted sutures. Four or five pairs of artery forceps are generally left protruding between the sutures. Sutures, swabs and forceps are removed 48 hours later. A gratifying feature is the rapidity with which haemorrhage ceases when the wound is subjected to tight packing for often during operation it has been alarming. In no case has an animal shown ill-effects from bleeding.

At this point it is necessary to refer to a modification of the procedure just described. It is required in those cases in which perforation from the bursa has been lateral rather than vertical. The primary incision must be continued downwards through the ligament before the diseased focus is exposed. This generally means a depth of 3 inches or more and the operator may experience some perturbation at the amount of preliminary cutting necessary. The bursa having been exposed, the overlying structures are incised in the antero-posterior direction to its limits. In order to remove the ligament and its laterally attached structures, it is necessary to make a second incision through the fibro-fatty tissue of the crest and under-running the skin laterally to an extent of about 2½ inches, along the whole length of the wound. The tissues between this incision and the bursa beneath are excised.

1. Long-standing poll lesion; recent involvement of withers.

2. Poll lesion making good post-operative progress.

3. Long-standing withers lesion.

The operative interference in open cases presents no essential differences from that just described but the absence of distension makes the location of channels and pockets more difficult. Thus, careful digital exploration must be carried out to ensure that all infected foci are effectively exposed.

Post-operative Course and Treatment

During the first 14 days or so after operation feeding from the ground should be prevented by tying the head high. In this way irritation of the wound due to movement is reduced—an important factor in withers cases. It is of interest to note, especially in poll cases, that excision of considerable amounts of nuchal ligament does not interfere with the animal's ability effectively to raise its head. It has been noticed that poll cases often tend to carry the head low the day after operation but the animal readily raises it if interfered with. During the first 14 to 21 days the wound is dressed daily. It is kept as dry as possible by sponging with tampons wrung out in normal saline solution and then powdered with sulphanilamide. Care must be taken that the drug is everywhere in contact with cut tissues and thus special attention must be paid to pockets. In this way pyogenic infection is controlled and healing by granulation proceeds rapidly. During the early days there is fairly copious serous exudation and skin contaminated by it should be cleansed daily. In cases making good progress, the depth of the wound is generally completely filled by granulation tissue in a period of 14 to 21 days and only the superficial pockets remain. At this time gauze drains, if they have been used, are removed. As soon as it is evident that the deep wound has closed, head restraint may be discontinued for from this point healing will be rapid. The wound is now dressed once every two or three days. A good, but not invariable, indication that the case is making good progress is the comparative absence of pain and the maintenance of bodily condition. The presence of pain is generally an indication of pyogenic invasion and its probable site is the depth of the wound. The onset of severe pain some 14 days or so after operation is a bad sign and generally indicates failure. It is most likely to occur in withers cases.

Speaking generally, poll cases are the more satisfactory to deal with. At operation the limits of the lesion are more easily detected for the atlas and its superimposed muscles give it a well-defined base. Moreover, this region is subjected to less movement irritation and healing is more rapid. At the same time, reference to the case records will show that nervous symptoms may develop in poll cases many months after it was thought a cure had been effected.

Prognosis

Of the 18 animals the subject of this report, twelve (66 per cent.) are, at the time of writing—eleven months to four years after operation—working satisfactorily. The wounds have healed and it is reasonable to assume that recovery has occurred.

Poll Cases.—Ten animals were involved and six have recovered. In all of them healing of the wound occurred but two (Nos. 2 and 10) developed meningitis ten months and (about) one year later respectively.

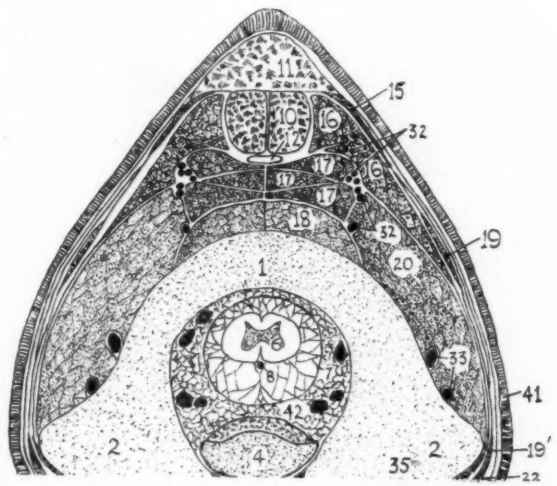

Fig. A.—*Transverse section of the neck through wing of atlas, perpendicular to upper border of neck.*

1. Ring of atlas.
2. Wing of atlas.
4. Odontoid process.
5. Odontoid ligament.
6. Spinal cord.
7. Dura mater.
8. Median spinal artery.
10. Funicular part of ligamentum nuchae.
11. Crest.
12. Atlantal bursa.
15. M. splenius.
16. M. complexus.
17. M. rectus capitis posticus (dorsalis) major.
18. M. rectus capitis posticus (dorsalis) minor.
19. Mm. trachelo-mastoideus and splenius (tendon).
20. M. obliquus capitis inferior (posterior).
22. M. mastoido-humeralis.
32. Branches of occipito-muscular vessels.
33. Vertebral vessels.
41. Skin.
42. Fat.

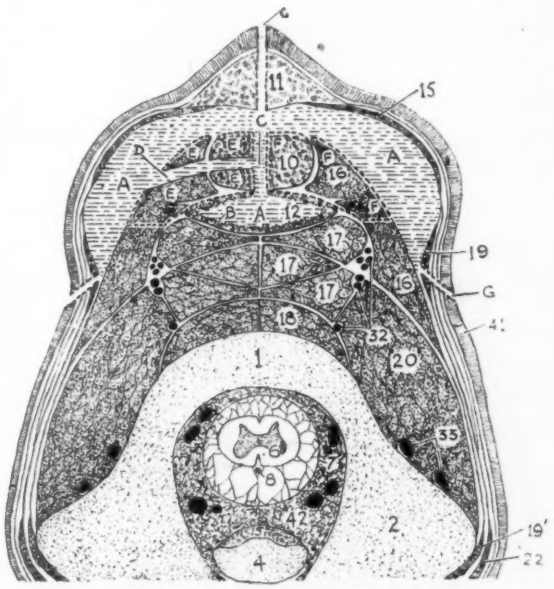

Fig. B.—*Transverse section of neck showing pathological changes occurring in atlantal bursitis and surgical procedure involved.* Section passes through middle of wing of atlas perpendicular to upper border of neck.

1. Ring of atlas.
2. Wing of atlas.
4. Odontoid process.
5. Odontoid ligament.
6. Spinal cord.
7. Dura mater.
8. Median spinal artery.
10. Funicular part of ligamentum nuchae.
11. Crest.
12. Atlantal bursa.
15. M. splenius.
16. M. complexus.
17. M. rectus capitis posticus (dorsalis) major.
18. M. rectus capitis posticus (dorsalis) minor.
19. Mm. trachelo-mastoideus and splenius (tendon).
20. M. obliquus capitis inferior (posterior).
22. M. mastoido-humeralis.
32. Branches of occipito-muscular vessels.
33. Vertebral vessels.
41. Skin.
42. Fat.
A. Fluid resulting from bursitis.
B. Granulation tissue lining bursa.
C.D. Tracks by which A. may escape from bursa.
E.F. Parts of muscle and ligament removed during operation.
G. Incision made during operation.

No. 10. Worked satisfactorily after operation and showed no symptoms until two days previous to being destroyed. It was seen to be staggering when brought out of the stable. Later the animal was found supporting itself by leaning against the wall. From this point symptoms rapidly developed; the horse became recumbent and coma set in.

On *post-mortem* examination the operation area was found to be completely filled by scar tissue except for a circumscribed lesion about 1 inch in diameter containing serous fluid and situated immediately above the occipito-atlantal joint. In the scar tissue there were several deep-seated foci about the size of a pea and containing inspissated pus. There was some necrosis of the dorsal surface of the atlas and new granulation tissue was found on the deep surface of the dorsal occipito-atlantal membrane.

No. 7 made an apparent recovery from operation and worked satisfactorily for a time. Later it became very thin and the attending veterinary surgeon suspected tuberculosis. It was destroyed but no *post-mortem* examination made. In the case of No. 6, both poll and withers were affected and both lesions were operated on. The poll wound healed but the withers failed to do so.

Withers Cases.—Nine cases were dealt with and seven recovered. In No. 6 (already referred to) the anterior part of the wound failed to heal and a sinus developed. Infection was not severe, pain was comparatively slight and the horse maintained its condition. Continuous movement was considered to be the main factor in preventing healing. The animal was destroyed 76 days after operation. In the second case of failure (No. 12), uncontrollable downward spread of suppuration occurred. For the first month after operation progress appeared to be satisfactory, the wound rapidly filling by granulation. From this time the area became more and more painful and the animal lost flesh. A deep-seated abscess developed anterior to the original lesion on the right side of the neck. Despite deep incision and the provision of drainage, a chronic focus of infection developed and the animal was ultimately destroyed 67 days after operation.

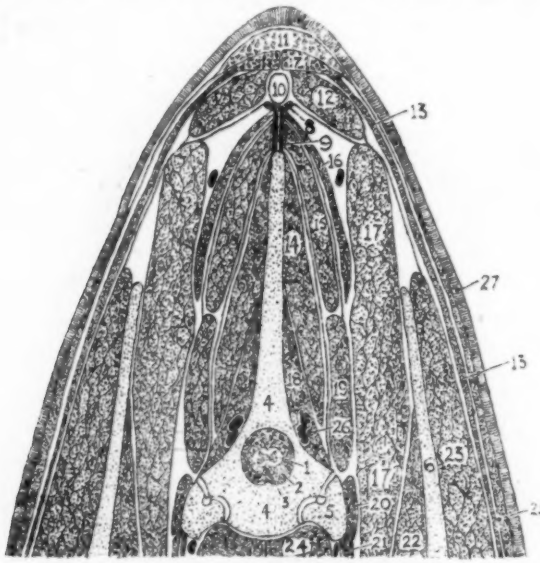

Fig. C.—*Section through Entrance to Thorax.*

Section passes diagonally downwards and forwards through second dorsal vetebrae, upper end of second rib and middle of first rib.

1. Spinal cord.
2. Dura mater.
3. Median spinal artery.
4. Second dorsal vertebra.
5. Upper end of second rib.
6. Scapula.
7. Funicular part of ligamentum nuchae.
8. Band of yellow elastic tissue which connects summits of second and third dorsal spines with funicular part of ligamentum nuchae.
9. Lamellar part of ligamentum nuchae.
10. Supraspinous bursa.
11. Crest.
12. M. rhomboideus. (Cervical.)
13. M. trapezius. (Cervical.)
14. M. longissimus dorsi. (Upper division.)
15. M. complexus.
16. M. splenius.
17. M. levator anguli scapulae.
18. M. semispinalis.
19. M. trachelo-mastoideus.
20. M. longissimus dorsi (lower division) and M. transversalis costarum.
21. Mm. intercostales.
22. M. subscapularis.
23. M. supraspinatus.
24. M. longus colli.
25. M. panniculus.
26. Superior cervical vessels.
27. Skin.

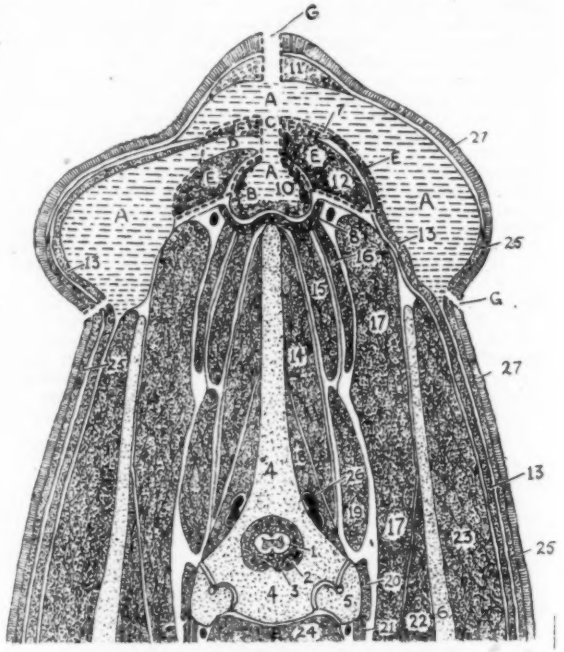

Fig. D.—*Section through entrance to thorax, showing pathological changes occurring in supraspinous bursitis and surgical procedure involved.*

Section passes diagonally downwards and forwards through second dorsal vertebra, upper end of second rib and middle of first rib.

1. Spinal cord.
2. Dura mater.
3. Median spinal artery.
4. Second dorsal vertebra.
5. Upper end of second rib.
6. Scapula.
7. Funicular part of ligamentum nuchae.
8. Band of yellow elastic tissue which connects summits of second and third dorsal spines with funicular part of ligamentum nuchae.
10. Supraspinous bursa.
11. Crest.
12. M. rhomboideus. (Cervical.)
13. M. trapezius. (Cervical.)
14. M. longissimus dorsi. (Upper division.)
15. M. complexus.
16. M. splenius.
17. M. levator anguli scapulae.
18. M. semispinalis.
19. M. trachelo-mastoideus.
20. M. longissimus dorsi (lower division) and M. transversalis costarum.
21. M.m. intercostales.
22. M. subscapularis.
23. M. supraspinatus.
24. M. longus colli.
25. M. panniculus.
26. Superior cervical vessels.
27. Skin.

A. Fluid resulting from bursitis.
B. Granulation tissue lining bursa.
C.D. Track by which A. may escape from bursa.
E.F. Parts of muscle and ligament removed during operation.
G. Incision made during operation.

TABLE I

Case Records

Serial and Case Nos.	Description of Animal	Site of Lesion	Type of Lesion	Agglutination Test	Date of Operation	Stay in Hospital Days	Progress Report, January, 1946, and Remarks
1 (L.)	4-year-old cart mare	Poll	Recent, open	Positive 1 : 160	18.9.41	57	Recovery ; in regular work ever since.
2 (L.)	6-year-old cart gelding	Poll	Long duration recently open	—	19.2.42	47	Wound healed, horse worked for about a year and then developed meningitis.
3 (F.33)	8-year-old cart mare	Withers	Recent, closed	—	24.8.42	30	Recovery ; working three years later. Has had a foal since operation.
4 (F.39)	6-year-old cart mare	Withers	Recent, open	Positive 1 : 160	5.12.42	31	Seven months pregnant at operation ; foaled normally. Recovery, working on farm.
5 (F.59)	7-year-old cart mare	Poll	Long duration, recently open	—	2.2.43	52	Completely successful.
6 (F.75)	7-year-old cart mare	Withers	Recent, open	—	2.4.43	28	Wound broke open after returning home but quickly healed again. Recovery.
7 (F.79)	Aged cart mare	Poll	Long duration, closed	Positive 1 : 320	29.4.43	105	Poll exudate positive for *Br. abortus*. Lesion healed.
		Withers	Recent, closed		28.5.43		Withers lesion failed to heal—destroyed.
8 (F.139)	5-year-old cart gelding	Poll	Closed, long duration	Positive 1 : 640	7.1.44	27	Wound healed. Animal destroyed six months later—wasting. Tuberculosis suspected.
9 (F.140)	5-year-old cart mare	Poll	Recent, closed	Negative	7.1.44	27	Recovery. From same farm as previous case.
10 (F.141)	4-year-old cart gelding	Poll	Long duration, closed	Positive 1 : 160	15.1.44	37	Exudate positive for *Br. abortus*. Recovery, now working Liverpool.
11 (F.169)	6-year-old cart gelding	Poll	Recent, closed	—	29.5.44	36	Wound healed, worked satisfactorily for ten months, then developed meningitis.
12 (F.174)	Aged Welsh cob mare	Withers	Long duration, closed	Positive 1 : 160	14.6.44	66	Successful.
13 (F.182)	5-year-old cart mare	Withers	Long duration, closed	Positive 1 : 320	3.7.44	67	Unable to check spread of infection—destroyed.
14 (F.190)	5-year-old cart mare	Poll	Closed	Positive 1 : 160	13.9.44	25	Recovery ; at work on farm.
15 (F.200)	4 - year - old hunter mare	Withers	Recent, closed	Negative	25.10.44	33	Recovery ; is being hunted.
16 (F.215)	6-year-old cart gelding	Poll	Closed	Positive 1 : 1,280	5.1.45	36	Recovery ; at work.
17 (F.221)	5-year-old blood mare	Withers	Long duration, open	—	17.1.45	33	Recovery ; is being hunted.
18 (F.228)	3-year-old cart gelding	Withers	Recent, open	Negative	19.2.45	16	Recovery : at work on farm.

COMMENTARY

The 16 cases which made satisfactory post-operative progress were in hospital for an average period of 36 days (16 to 66) and during that time the average amount of sulphanilamide used on a case was estimated at 3 lb.

Blood from twelve cases was examined for *Brucella abortus* agglutinins and nine were positive in peak titres of 1 : 160 to 1 : 1,280. The organism itself was isolated from the exudate of two long-standing poll cases, Nos. 7 and 10 (it has also been obtained from a withers lesion dealt with subsequent to the period under review). Two animals, Nos. 1 and 9, had been unsuccessfully treated with dead *Br. abortus* vaccines several months before operation.

During the past six months, three cases (two withers, one poll) giving positive bloods have been treated with a series of injections of the Ministry of Agriculture No. 1 (strain 19) vaccine. In one, involving the withers, rapid recovery appeared to occur and the practitioner's report, five months later was that there had been no recurrence. The other two appeared to be uninfluenced by vaccination and were subsequently operated on.

In no case was the nematode *Onchocerca cervicalis* found in the excised portions of the ligament but this statement must not be taken as positive evidence of its absence for a detailed search by a parasitologist was not made.

Summary

A record of 18 cases of closed, or recently open, bursitis of the poll or withers in the horse, subjected to surgical treatment, is given.

The nature of the lesion found at operation is described as also are the objects of operation, its technique and post-operative course.

Twelve (66 per cent.) of the animals made an apparent recovery and were working satisfactorily eleven months to four years after operation.

The causes of failure are discussed.

Acknowledgments

For the figures illustrating this article the writer is indebted to Mr. J. W. Dransfield, M.V.Sc., M.R.C.V.S., of the Department of Veterinary Anatomy in the University. Figures A and C were prepared by him from dissections of the normal animal, while B and D were developed by him from the writer's descriptions of the lesions. Thanks are also due to Dr. G. O. Davies and Mrs. I. W. Brocklehurst, M.R.C.V.S., of the department of Veterinary Pathology, who carried out the bacteriological work associated with the cases. Mr. F. Greenway, M.R.C.V.S., kindly informed the writer of the symptoms exhibited by Case No. 10 before its death. Finally the help received from colleagues in the department of Veterinary Surgery during and subsequent to operations, and also that of final year students who did most of the dressings, must be acknowledged.

DOMESTIC POULTRY-KEEPERS' COUNCIL

The Right Hon. Tom Williams, M.P., Minister of Agriculture and Fisheries, who resigned the Chairmanship of the Domestic Poultry-Keepers' Council in June, 1945, has appointed the Right Hon. Lord Walkden to be the new Chairman of the Council. Lord Walkden has been a member of the Council since its inception. Mr. E. C. King, who is the ex-Chairman of the Urban District Councils' Association, has been appointed a member of the Council in succession to the late Dr. J. H. Newnham. Mr. Gordon Saunders has resigned his position as Honorary Central Organizer of the Council and has been appointed a member of the Council. Mr. A. P. F. Grant, the Deputy Central Organizer, has been appointed Central Organizer, and Miss V. C. Lawe, of the Ministry of Agriculture and Fisheries, Africa House, Kingsway, W.C.2, has been appointed Secretary to the Council in place of Mr. G. F. Dean.

ABSTRACTS

[Induction of Lactation in Goats and Cows with Synthetic Oestrogens and Anterior-Pituitary Extracts. Folley, S. J., Malpress, F. H., and Young, F. G. (1945.) *J. Endocrinol.* **4**. 181-193.]

Experiments have shown that simultaneous treatment with oestrogen and anterior-pituitary extract induced lactation in virgin goats more quickly than treatment with oestrogen alone. It was also shown that a number of those cows and goats which failed to come into lactation with oestrogen treatment could be brought into copious lactation when ox anterior-pituitary extract was administered. It is believed that the extracts act by stimulating mammary growth and augmenting the supply of lactogenic hormones. The extracts exerted a galactopoietic effect when administered during the peak of induced lactation, an effect not observed during the peak of normal lactation.

The Galactopoietic Action of Pituitary Extracts in Lactating Cows

1. Dose-response relations and total yields during declining lactation. Folley, S. J., and Young, F. G. pp. 194-204.
2. The response during the peak of lactation. Fawns, H. T., Folley, S. J., and Young, F. G. pp. 205-211.
3. Comparison of extracts of pituitary glands from different species. Folley, S. J., Malpress, F. H., and Young, F. G. pp. 212-218.

In experiments involving 85 cows, it was shown that when ox anterior-pituitary extract was administered during declining lactation, in doses equivalent to 2·5 grammes of fresh gland every second day for three weeks, the milk yield on the average was increased by 20 per cent. During the following two weeks the milk yield was 15 per cent. above that normally expected. No loss of condition was observed in the experimental animals.

Further experiments on 15 cows showed that the extract did not have a galactopoietic effect when administered during the peak of lactation. It would appear that the factor limiting the milk yield during the peak of lactation is not the rate of liberation of endogenous galactopoietic hormones from the anterior pituitary as appears to be the case during the decline of normal lactation, in lactation induced with oestrogens, and probably in lactation following abortion.

The galactopoietic activity of ox, horse, sheep, and pig anterior-pituitary extracts was tested on 24 cows in declining lactation. When single injections of pituitary extract were administered, horse pituitary extract was more active in stimulating milk production than ox pituitary. Pig and sheep pituitary extracts were inactive in single doses; in repeated injections they produced a substantial and sustained depression of milk yield. It was considered inadvisable to use horse pituitary extract for repeated injections on account of its high follicle-stimulating activity. It is postulated that the depression of milk yield following the use of pig and sheep pituitary may result from rapid antihormone formation on to the heterologous glandular material. These results cannot be correlated with the relative prolactin content of the pituitary glands of the different species, giving further proof that prolactin is by no means the only factor concerned in the galactopoietic action of anterior-pituitary extracts.

A. T. C.

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[Tests with Fluorides, especially Sodium Fluoride, as Anthelmintics for Swine. Habermann, R. T., Enzie, F. D., and Foster, A. O. (1945.) *Amer. J. vet. Res.* **6**. 131.]

The authors tested upon pigs, sheep, goats, horses, dogs, chickens and one bull the anthelmintic action and toxicity of sodium fluoride, sodium fluoride combined with phenothiazine and five other organic fluorides. Of these substances only sodium fluoride used alone gave promising results. Aluminium silicofluoride, barium fluoride, aluminium fluoride, sodium aluminium fluoride (cryolite) and sodium silicofluoride all showed a poor or moderate anthelmintic action or none at all. The authors state that this work is still in progress, so that the results they record constitute a progress report rather than a recommendation to use fluorides as anthelmintics. They emphasize that further work is needed before sodium fluoride can be endorsed as a safe and suitable anthelmintic.

In all 151 pigs were used, most of which were in very poor condition and were infested with *Ascaris lumbricoides*, *Ascarops strongylina* (here called the stomach worm), *Oesophagostomum* spp. (the nodular worm) and "*Trichuris suis*" (the whipworm = *T. trichiura*). One day before treatment the pigs were given about half their normal feed (a mash of cracked yellow corn, bran and oats); the fluorides were then given in this feed for 1 to 3 days. Faeces were collected each 24 hours and examined until no more nematodes were passed; the pigs were then killed for autopsy. Sections of representative tissues of several animals were also made, but these are not discussed in this paper. For details of the results of the experiments the paper itself must be consulted.

Sodium fluoride alone was given in dry feed to 128 pigs. When sodium fluoride alone at the rate of 1 per cent. of the feed was given individually for three consecutive days to seven pigs weighing 19 to 335 lb., requiring total doses of 7 to 72 lb. of sodium fluoride, the mixture was usually readily eaten the first day, but less readily at each feed thereafter. Usually the feed not eaten was mixed with normal feed until all had been eaten. These doses removed 65 (97 per cent.) of 67 ascarids, 21 (14 per cent.) of 149 stomach worms, 189 (46 per cent.) of 410 whipworms and 54 (24 per cent.) of 225 nodular worms. All the pigs were normal except one which vomited the day after the fluoride was eaten and another which died on the fourth day and showed at autopsy evidence of pneumonia. Similar results were obtained when sodium fluoride alone was given at the rate of 2 per cent. of the feed given for one day. This dose removed 100 per cent. of the ascarids and 99 per cent. of the "stomach worms," but only 37 per cent. of the nodular worms and only 4 per cent. of the whipworms. Similarly, sodium fluoride at the rate of 1½ per cent. of the feed removed 99 per cent. of ascarids, 96 per cent. of "stomach worms" but only 45 per cent. of nodular worms and only 3 per cent. of whipworms. Sodium fluoride given at the rate of 1½ per cent. of the feed given for one day, not individually, but to a group of four pigs, removed 100 per cent. of the ascarids and 100 per cent. of the "stomach worms" but only 35 per cent. of the nodular worms and only 2 per cent. of the whipworms. At the rate of 1 per cent. of the feed given for one day sodium fluoride alone removed 96 per cent. of ascarids and 90 per cent. of "stomach worms" from pigs individually dosed, but only 1 per cent. of nodular worms and none of the whipworms. Given at the same rate it removed 97 to 100 per cent. of ascarids from three groups of pigs not dosed individually. In all these pigs there were only slight and transient ill effects, consisting chiefly of occasional vomiting and soft faeces. Only four of the 124 pigs used died and in all except one of these four the lesions found at autopsy suggested that the fluoride was not the cause of death. Results might have been better with pigs in better condition. Thus although sodium fluoride was effective at the lowest dose used, its efficacy at all the doses used against nodular worms and whipworms was too low to be significant. The effective dose against ascarids and Ascarops was about 0·13 gramme per lb. "body weight"; but the intake per animal probably varied considerably and the optimum dosage seems to be at the rate of 1 per cent. of the feed for one day.

Mixtures of phenothiazine in ratios of 1, 1·4, 2 and 3 parts of sodium fluoride to 1 part of phenothiazine were given at rates of 1·2 to 2 per cent. of the feed to 17 pigs. These mixtures were all well tolerated and they removed 100 per cent. of the ascarids, but only 42 per cent. of the nodular worms. They were, however, much less palatable than feeds containing sodium fluoride alone and, when the amounts of phenothiazine were increased, the pigs refused to eat the mixture.

Toxicity tests showed that feeds containing 5 per cent. of sodium fluoride alone were fatal to the pigs used and that feeds containing 4 to 5 per cent. of it were "highly dangerous"; but the pigs tended to limit the dose taken by refusing to take too much, so that the anthelmintic action was maintained and the ill effects were mild. When a horse weighing 450 lb. was given 15 grammes of sodium fluoride in capsules in doses of 5 grammes on alternate days, there were no ill effects and eleven ascarids were recovered from the faeces; after two months it was given 18 grammes in capsules and 9 grammes on each of two consecutive days; the only effect was diarrhoea, but 60 ascarids and 58 "oxyurids" were recovered from the faeces. The ascarid egg count was reduced from 2,600 eggs per gramme to 0. Similar results were obtained with five other horses. A seventh horse, weighing 650 lb., given 30 grammes of sodium fluoride in the feed, showed diarrhoea and inappetence and was killed *in extremis* on the third day; autopsy revealed congestion of the stomach and submucosal haemorrhages in the small intestine and viable strongyles still in the intestine. There was no significant anthelmintic action when 40 grammes of sodium fluoride were given to a bull weighing 400 lb., but there were no marked ill effects. There was no significant anthelmintic action when sodium fluoride was given to seven goats, but four of them died the night after the dose was given and showed haemorrhages in various organs. Two out of three sheep given sodium fluoride died, one on the ninth day after the dose with congestion and necrosis in the gastro-intestinal tract and one on the ninth day with extensive *post-mortem* changes in all "internal organs"; no statement is made about the anthelmintic action in sheep. There was no anthelmintic action and no significant toxic reaction in two chickens and two dogs given sodium fluoride alone. The authors remark that their results seem to indicate that most farm animals can, like wine, withstand relatively large doses of sodium fluoride or they refuse to eat or retain enough to cause fatal effects, so that it appears unlikely that accidental poisoning

with sodium fluoride will occur. [The actual results recorded, however, seem to indicate that, not only is there no significant anthelmintic action in any of the animals used except in the pigs, but that administration of sodium fluoride is dangerous in all the animals used except the pigs and that pigs should not be given more than 3 per cent. at most of sodium fluoride in the feed. The anthelmintic possibilities of fluorides should, nevertheless, be studied further.]

G. L.

REPORT

[New South Wales: Livestock Disease Report, 1944-45. (Reference A.I. 40/2808.)]

Issued as a circular memorandum by Colonel Max Henry, Chief of the Division of Animal Industry, this report, though brief, contains much information of general as well as of local interest.

No spectacular epizootics occurred and the figures for pleuropneumonia contagiosa of bovines were regarded as very satisfactory considering the introduction of a quarter-million cattle from Queensland. The discovery of arsenic-resistant strains of cattle ticks (presumably *Boophilus* spp.) in parts of N. Queensland gave increased interest in experiments with D.D.T. as a tickicide. Owing to severe drought conditions the heaviest losses encountered in livestock were those associated with malnutrition.

Research notes, of general interest:—

"Mastitis in cattle: Sulphanilamide in maize oil has given good results in the treatment of streptococcal mastitis when used on farms under field conditions." Penicillin was on trial. Swine Fever: "Experimental work has shown that it (the virus in frozen pork) will remain alive for over 500 days." Brucellosis: Strain 19 vaccination of calves was on field trial. *B. suis* was recovered from a boar which gave a very low agglutination titre. Sheep: Abortion in sheep due to Listerella infection was recorded for the first time. Sheep blowfly: Long range genetical investigation was proceeding in an endeavour to evolve a plain-breeched sheep without loss of wool quality. Drought and building restrictions hampered nutritional studies. Anthelmintics: N-butyl chloride was reported as "likely to be effective" as a substitute for oil of chenopodium as an ascaricide for pigs.

Glenfield Veterinary Research Station was much improved by the purchase of additional land, thereby doubling the area, and construction of new buildings was in progress. This station handled some 24,606 specimens submitted for examination during the year.

S. A. E.

IN PARLIAMENT

Restoration of Hill Farms

The Hill Farming Bill, presented to Parliament by Mr. Tom Williams on Monday of last week, contains, as its main proposal, a scheme for restoring hill farming land over a period of five years at a cost to the Exchequer of not more than £5,000,000 in grants.

Approved schemes of improvement will be assisted by grants of one-half of the cost. The Exchequer will also pay half the cost of improvements to common land. The Bill empowers the Minister to make schemes for the payment of subsidies for sheep and cattle kept on hill land, but it is not possible to say in advance what these will cost. In 1944-45 these subsidies cost £3,000,000.

Questions

Bovine Contagious Abortion

Mr. Viant asked the Minister of Agriculture whether any records exist showing the number of cows suffering from contagious abortion during the last 20 years; and whether cow keepers report to his Department the incidence of this disease amongst their cows.

Mr. T. Williams: Bovine contagious abortion is not a notifiable disease and no records as to the number of cases are therefore available.

Colonial Medical Research

Squadron-Leader Donner asked the Secretary of State for the Colonies when the Colonial Medical Research Committee, under the chairmanship of Sir Edward Mellanby, will complete their report, including, *inter alia*, the question of the establishment of a malaria research control institute in Africa; and whether this report will be published.

Mr. George Hall: It is as yet too early to say when the Colonial Medical Research Committee may have completed this most important and difficult part of their work, but when the broad lines of Colonial medical research policy have been determined, I shall certainly take steps to ensure that it is made known in the most appropriate manner.

Food Supplies: Horses and Dogs

Mr. P. Freeman asked the Minister of Food whether he will prohibit any supply of food in this country being used for feeding animals, such as horses and dogs that are maintained solely for the purpose of hunting and sport, during the present emergency.

The Minister of Food (Sir Benjamin Smith): I have already gone as far as is reasonable in the direction sought. Only very small quantities of feeding-stuffs are made available, and I propose to circulate the details in the Official Report.

Mr. Freeman: Would it not be better if these animals were put to some more worthy purpose?

Following are the details:—

No rationed feeding-stuffs out of the ration pool are made available for greyhounds. Rationed feeding-stuffs out of the ration pool are not normally issued for the maintenance of bloodstock and racehorses where oats grown on the holding on which the horses are kept are available. Rations for hunting horses are allowed for months October to January inclusive on a basis of 1/12th of prewar numbers and at the rate of 3 cwt. horsefeed per month per horse.

Fox hounds actively engaged in fox or stag destruction are allowed rations throughout the year on the basis of 1/8th of prewar numbers, at the rate of ½ cwt. of cereal per month per couple. Rationed feeding-stuffs are made available for sheep dogs on hill farms. Oats grown on a holding may be retained by the grower for feeding to his own livestock, which may include horses.

Dried Grass

Mr. Wilfrid Roberts asked the Minister of Agriculture whether, in view of the renewed shortage of animal feeding-stuffs, he will take action to increase the production of dried grass from the existing plants and encourage the establishment of new plants, in order that the supply of high protein dried grass suitable for all classes of livestock shall be increased as rapidly as possible.

Mr. T. Williams: At present market prices commercial grass drying would appear to be a remunerative proposition and I am not aware that further encouragement is required.

Mr. Roberts: Can the right hon. Gentleman assist in encouraging this production which has been discouraged during the war owing to the shortage of material?

Mr. Williams: Yes, Sir, but I am sure my hon. Friend will agree that there is no discouragement at the moment. In fact, an individual licence for grass driers is necessary, and in all other respects we are giving what encouragement we can.

Vivisection

Mr. P. Freeman asked the Secretary of State for the Home Department how many experiments were performed on cats and dogs under the Cruelty to Animals Act, 1876, during the year 1944, with and without anaesthetics, separately; and in how many cases, respectively, were the cats and dogs allowed to recover from the effects of the anaesthetics.

Mr. Ede: The number of experiments performed under the Act in 1944 on cats or dogs without anaesthetics was 8,055, and the number in which the licence holder was authorized to allow a cat or dog to recover from an anaesthetic was 505. As respects experiments performed entirely under anaesthetics, I have no separate figures for cats and dogs, but the total number of such experiments on animals of any kind was 8,764.

Mr. P. Freeman asked the Secretary of State for the Home Department how many inspectors were employed in 1944 for the purpose of inspecting 1,281,882 simple inoculations and similar proceedings; what method is employed for reporting cases of unnecessary suffering to animals concerned; and how many cases were so reported.

Mr. Ede: To relate the number of Inspectors to the number of simple inoculations involves a misconception of the nature of the Inspectors' work and methods. There were four Inspectors in 1944 and I know of no ground for the suggestion that they were unable to exercise proper supervision. Any unnecessary suffering would have been a breach of the conditions laid down and would have been reported, but in their inspections the Inspectors found that the conditions were faithfully observed and no case of unnecessary suffering was reported.

University Grants

Sir E. Graham-Little asked the Chancellor of the Exchequer if he will now make a statement regarding the grant to universities which he proposes to make in the forthcoming Budget.

Mr. Dalton: I propose to ask Parliament to vote £9,450,000 for grants to the universities for 1946-47. This is £3,800,000 more than was voted last year. It includes a further £2,250,000 for capital grants, a revote of £1,200,000 which has not been spent in 1945-46, and an additional £100,000 for dental education. In order to encourage universities to plan future development over a term of years, I have told the University Grants Committee that I shall be prepared, if good cause is shown, to ask Parliament to vote even larger capital sums.

Pit Ponies

In the House of Commons on Thursday of last week, Mr. Peter Freeman presented a Petition on behalf of pit ponies, signed by 50,175 persons, praying that work now being done by pit ponies should be done by mechanical haulage, and desiring that they be withdrawn from the pits at the earliest possible time. "There are still 25,000 of these working underground in conditions quite unnatural to their normal life (said Mr. Freeman), and it is desired that their work shall be done by mechanical haulage and that, until they are withdrawn from the pits, it is desired that they should be permitted to work only one shift of eight hours per day, which is not permitted at the present time. I beg to present this Petition, and to hope that it will be brought into operation at the earliest possible moment."

It was ordered that the Petition lie upon the Table.

MINISTRY OF AGRICULTURE NEWS SERVICE

Milk Recording in Essex.—In Essex, official milk recording began in 1914 with 20 herds. Little progress was made for the next few years and the number of officially recorded herds did not reach the 300 mark until 1937-38, when it was 337. During the past six years, however, an additional 233 farmers have taken up recording and there are now about 600 herds under the National Milk Records senior scheme of the Milk Marketing Board.

A Quality Contest for Milk.—Surrey War Agricultural Executive Committee is running a contest the object of which is to show that good quality milk can be produced without the possession of special buildings and plant. The contest is open to hand or machine milked herds.

Three visits will be made to competitors' farms between January and June and two of these will be in the nature of a surprise. Samples of milk will be put to sediment tests to ascertain the standard of cleanliness achieved. Buildings and equipment will be inspected and the final award will be based on the points accumulated as the result of the three visits.

Soil Analysis.—Sometimes it is thought that a chemical analysis of the soil will show its responses to fertilizers. The soil is, however, far too complex to allow for the complete solution of the problem, but soil analysis does help a farmer appreciably. Every farmer can have his soil analysed free of charge, and judging by hundreds of thousands of soil samples that have been dealt with by advisory centres during the past six years, the service is a popular one and the information accepted widely as of considerable value.

In these days of scarcity of some fertilizers soil analysis can do much to prevent waste, particularly of potash, and may also help a farmer to obtain extra phosphate or potash. Thus, if an analysis of a soil sample shows a marked deficiency in potash then the farmer is entitled to apply to his County Agricultural Executive Committee for a special allowance of potash, over and above the quantities allowed for crops such as potatoes and sugar beet. Knowledge of extreme deficiency in potash is invaluable when a field is being seeded down.

Fortunately the lime requirements of a soil can be far more easily and accurately ascertained than its actual fertilizer needs, and farmers have not been slow in having tests for lime carried out, rather than relying on "I think it could do with a little lime." When a farmer asks to have his fields sampled for soil analysis, he should always give the sampler as much of the fields' fertilizer history as he can, especially on past liming.

Weekly Wisdom

"*. . . Knowing an anatomy textbook by heart does not make a good anatomist any more than memorizing the Bible makes a good Christian. . . .*"—*Doctor in the Making*, by A. W. Ham and M. D. Salter. (Medical Publications, Ltd., London.)

The Funeral of Dr. Fred Bullock

In sorrow at the sudden passing of one so widely held in affectionate esteem, as many members of the profession as could attend at Golders Green on Wednesday of last week, joined with the family of the late Dr. Bullock and with the representatives of other bodies, at the funeral service, conducted by the Senior Chaplain of the Crematorium, the Reverend W. T. Bulman.

The Psalm (15) of tribute to the upright man prefaced a moving address and prayers uniting all in thankfulness for a life of service.

The family mourners were Mrs. Fred Bullock, Mr. Bert Bullock and Mr. Frank Bullock (brothers), Mr. Williams, with Mrs. Williams (sister). Captain Winrid Bullock, the son, unfortunately was unable to reach home in time—he is in the Intelligence Corps in Belgium.

The Royal College of Veterinary Surgeons was represented by the President (Major A. B. Mattinson) and Mr. H. W. Dawes (Junior Vice-President), together with Mr. C. W. Francis (Assistant Secretary) and Mrs. Francis. Mr. T. N. Gold (Chairman) represented the Board of Examiners and the Midland Counties V.M.A. Representing the National Veterinary Medical Association, in the absence of the President (Mr. G. N. Gould) in Ireland, was Professor Wm. C. Miller (Senior Vice-President), with Captain T. L. Wright (Hon. Secretary, N.V.M.A.), also representing the Society of Veterinary Practitioners of which he is President, and Mr. H. E. Bywater (Hon. Treasurer, N.V.M.A.). The Victoria Veterinary Benevolent Fund was represented by Mr. A. Spicer (President), Mr. Male (Vice-President) (also representing Mr. N. P. Male), Professor G. H. Wooldridge (Vice-President), and Colonel P. J. Simpson (Hon. Secretary), while Mrs. R. E. Glover represented the Ladies' Guild. The Director-General and other officers of the R.A.V.C. were represented by Major Simpson. Principal J. B. Buxton represented the Board of Governors of the Royal Veterinary College, Mr. E. C. Lloyd the Ministry of Agriculture and Fisheries, and Mr. T. Dalling, also of the Ministry, represented the Royal "Dick" Veterinary College, Edinburgh.

The Central Veterinary Society was represented by Dr. Tom Hare and Dr. W. R. Wooldridge (who also represented the Veterinary Educational Trust). Mr. H. S. Caldwell represented the Association of Veterinary Inspectors. Mr. A. A. Elliott, of Gray's Inn (also representing Mr. T. J. F. Hobley). Mr. Herbert Fenton (Member of the Court) and Mr. L. C. F. Robson (Clerk of the Court), represented the Worshipful Company of Farriers, Sir Charles Hardinge the R.S.P.C.A., the Dogs' Home, Battersea, and the Home of Rest for Horses, and Mr. Keith Robinson, Our Dumb Friends' League. Dr. Jean Vinter represented the Universities' Federation for Animal Welfare. Mr. Hugh Linstead, M.P., represented the Pharmaceutical Society, of which he is Secretary. Mr. T. Dell and Mr. W. H. C. Davey represented Gray's Inn Masonic Lodge and Gray's Inn Lodge of Instruction.

Others noted as being present were: Mr. J. K. Bateman, Mrs. and Miss Brittlebank, Professor T. J. Bosworth, Colonel G. M. Bushman, Dr. J. T. Edwards, Mr. R. E. Glover (also representing Emeritus Professor Share Jones, Senior Member of Council, and Dr. Mary Share Jones), Miss Gray (daughter of the late Mr. Henry Gray), Mr. H. C. Gregory, Dr. Kauffman, Major T. Lishman, Mr. A. W. Moller, Brigadier C. A. Murray, Sir Arthur Olver, Major L. Pugh, Dr. Leslie Sheather, Mr. F. E. Somer, Mr. H. W. Steele-Bodger, Mr. R. V. Thatcher (Solicitor to the Royal College), Captain W. K. Townson, Mr. F. O. L. Walpole, Mr. and Mrs. B. O. E. Walpole, Mr. I. Whitton, Mr. I. Willett (representing also the Executors of the late Mr. W. S. King), together with Miss Rayner (Assistant Librarian, R.C.V.S.), Mr. F. Knight (Secretary, N.V.M.A.), and Mr. W. Brown (Editorial Representative, N.V.M.A.).

As intimated in our last issue, it was Dr. Bullock's wish that, in lieu of floral tributes, donations should be sent to the Victoria Veterinary Benevolent Fund. Floral tributes, therefore, were confined to wreaths from the family, the President and Council of the Royal College, the Director-General and Officers of the R.A.V.C., Mr. and Mrs. Walpole, and Mr. and Mrs. C. W. Francis.

A Memoir and personal tributes will be published in an early issue.

B.M.A. Appointments

Lieut.-Colonel D. P. Stevenson, an Assistant Director-General of Army Medical Service, and Dr. E. E. Claxton, of Sutton Coldfield, have been appointed Assistant Secretaries of the British Medical Association. Dr. E. R. C. Walker, of Aberdeen, son of the late Sir Norman Walker, has been appointed Scottish Secretary of the B.M.A. Dr. Walker was a prisoner of war in Germany from 1940 to 1943.

NOTES AND NEWS

Diary of Events

Mar. 2nd.—Whole-day Conference of the Nutrition Society (English Group), at the London School of Hygiene, Keppel Street, W.C.1.
Mar. 2nd.—Whole-day meeting of the Nutrition Society (Scottish Group) at the Institute of Hygiene, the University, Glasgow.
Mar. 2nd.—Meeting of the Society of Women Veterinary Surgeons at Birmingham (Grand Hotel), 2.30 p.m.
Mar. 6th.—Meeting of the West of Scotland Division, N.V.M.A., at Glasgow (North British Hotel), 2.30 p.m.
Mar. 7th.—Meeting of the Central Veterinary Society at the Conway Hall, Red Lion Square, W.C.1, 2 p.m.
Mar. 8th.—Meeting of the N.V.M.A. Overseas Committee, 10.30 a.m.
Mar. 12th.—Joint Meeting of the Zoological Society of London and the Institute for the Study of Animal Behaviour, Zoological Gardens, London, 5 p.m.
Mar. 13th.—N.V.M.A. Drafting Committee on Calf Husbandry and Calf Diseases, 2 p.m.
Mar. 13th.—Meeting of the Editorial Committee, N.V.M.A., 2.30 p.m.
Mar. 14th.—N.V.M.A. Survey Committee, 36, Gordon Square, W.C.1, 10 30 a.m.
Mar. 15th.—N.V.M.A. Survey Committee, 36, Gordon Square, W.C.1, 10 a.m.

N.V.M.A. Meetings at 36, Gordon Square:—
Apr. 15th.—Therapeutic Trials Committee at 11.30 a.m.
Finance and General Purposes Committee at 1.30 p.m.
Apr. 16th.—Sub-committee on First Aid Handbook at 10 a.m.
Organizing Committee at 12 noon.
Joint Veterinary Officers and Public Health and Parliamentary Committee at 2 p.m.
Sub-committee on Conditions of Sale at Cattle Markets at 2.30 p.m.
Appointments Committee at 4 p.m.

N.V.M.A. Meeting at the Connaught Rooms, Great Queen Street:—
Apr. 17th.—Council Meeting at 11 a.m.
May 3rd.—Meeting of the Welsh Branch, N.V.M.A., at Aberystwyth.

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N.V.M.A. President Visits Northern Ireland

The happy precedent set last year by the visit of the Acting President of the National Veterinary Medical Association to Northern Ireland was followed last week when, to the pleasure of all concerned, Mr. Geo. N. Gould, the President of the Association, was the guest of the North of Ireland Division. He was welcomed at the Airport by Dr. W. R. Kerr, Hon. Secretary of the Division, on the Wednesday, and on the following day addressed a meeting of over 70 members at Belfast on "Veterinary Practice, Present and Future," the excellent discussion which ensued being concerned mainly with modern methods of treatment and artificial insemination.

During his stay, the President had the opportunity of visiting Stormont and seeing the work that is in progress there; also Belfast Slaughterhouse, where he met Mr. Jas. McAllan, Assistant Secretary, Ministry of Northern Ireland, and Dr. H. G. Lamont, Head of the Veterinary Research Division, Stormont—in whose company and that of Mr. Culbertson, Chief Livestock Officer, he attended the Royal Ulster Bull Show and Sale. Prior to Mr. Gould's return on Saturday, a Dinner Party was held and proved a delightful social occasion, attended by many of the prominent members of the profession whom our President had had the pleasure of meeting —including, in addition to those already mentioned, Captain Alex. Monro, Chief Veterinary Officer, Belfast; Mr. Alex. McLean, Chief Veterinary Officer, Dublin; Mr. John Stratford, Manager of Belfast Slaughterhouse, and Mr. R. W. Cassells.

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Roll of Honour

McDOUGALL, Kenneth Dougall, Lieut. U.S.A. Infantry. Graduated Edinburgh December 15th, 1934. Killed in Normandy September, 1944. (Notification just received.)

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PERSONAL

Second Decoration for Lieut. P. S. Pugh.—Lieut. Peter Storie Pugh, M.C., elder son of Major L. P. Pugh, F.R.C.V.S., of Sevenoaks, has been awarded the M.B.E. He obtained the M.C. while in France in 1940. He was afterwards taken prisoner and sent to Germany. Lieut. Pugh joined The Queen's Own Royal West Kent Regiment from Cambridge University at the outbreak of war. He has now resumed his studies in connection with his training for veterinary work.

Forthcoming Marriage.—TAYLER—CURRIE.—The engagement is announced of Mr. Reginald C. Tayler, R.A.V.C., of Richmond, Surrey, to Miss Margaret K. Currie, elder daughter of Mr. J. M. Currie, M.R.C.V.S., of Lowestoft, Suffolk.

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PROCEDURE FOR RELEASE UNDER CLASS B

To remove any possible misunderstanding of the position of members of the veterinary profession in the above matter, it is felt that publication of the following note may be of service.

Our readers will be aware that the Government's motive in formulating Class B release scheme was the provision of a means whereby certain key individuals in selected national key industries might be released, in certain circumstances, in advance of their normal turn under the general age and service principle which governs the bulk of releases under Class A. A first requisite, therefore, is that the work for which release is sought should be within the ambit of vital national industry selected by the Government as requiring special treatment in this respect. The second requisite is that the individual to be released should be of such importance that it is in the national interest that he should be released before his proper turn.

As regards the procedure to be followed, in Class B release, it is absolutely necessary that this release should be sponsored by whatever Government department may be responsible for the particular activity involved. In the case of the veterinary profession, the Ministry affected would be the Ministry of Agriculture and Fisheries. The application, if and when endorsed by the sponsoring department, is then transmitted to the Ministry of Labour and subsequently referred to the War Office (or whatever Service department may be concerned) in order to see whether or not it is possible to make the individual soldier or officer available for Class B release. But, in no circumstances whatsoever, may an individual make a direct application for release under Class B and, if the application is based not on the grounds of national interest under Class B scheme but on personal grounds of compassionate release, the chances of success would be slight if it was found that application was in fact being made for the personal convenience of an officer or soldier as distinct from genuine compassionate reasons.

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ROYAL SANITARY INSTITUTE CONGRESS AT BLACKPOOL

The Rt. Hon. Lord Woolton, P.C., C.H., D.L., has accepted the office of President of the Health Congress which is to be held at Blackpool from June 3rd to 7th next, by the Royal Sanitary Institute.

The Congress will be divided into sections, which will include a section on Veterinary Hygiene, of which Professor J. G. Wright, M.V.SC., F.R.C.V.S., of the Liverpool School of Veterinary Science will be the President; a section on Preventive Medicine, the President of which will be Sir Wilson Jameson, K.C.B., M.A., M.D., F.R.C.P., D.P.H.; and one on Food and Nutrition, over which Professor S. J. Cowell, M.A., M.B., B.CH., F.R.C.P., will preside.

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ADDRESSES OF DISEASE-INFECTED PREMISES

The list given below indicates, first, the county in which are situated the premises on which disease has been confirmed, followed by the postal address and date of outbreak.

SWINE FEVER:

Cumberland.—Kingmoor Farm, Kingstown, Carlisle, Cumberland (Feb. 22nd).

Lanarks.—Moodiesburn, Muirhead, Glasgow, Lanarks (Feb. 23rd).

Lincs. (Lindsey).—Minster Farm, Dalby, Spilsby, Lincs. (Feb. 23rd).

Lincs. (Kesteven).—Uffington, Stamford, Lincs. (Feb. 20th).

Norfolk.—Lower Farm, Fulmodestone, Guist, Norfolk (Feb. 21st).

Notts.—Fields Farm, Widmerpoole, East Leake, Loughborough, Leics. (Feb. 23rd).

Oxon.—Radcot Bridge Farm, Radcot, Bampton, Oxon. (Feb. 23rd).

Somerset.—Wiveliscombe Pig Club, The Brewery Yard, Bull Close, Golden Hill, Wiveliscombe, Taunton, Som. (Feb. 23rd).

Yorks. E.R.—Black Carr Lane, Gatehouse, Nafferton, Driffield, Yorks. (Feb. 23rd).

Yorks. W.R.—Rodwell Head Farm, Cross Stone, Todmorden, Lancs. (Feb. 19th); Clough House Pig Club, Flathouse, Linthwaite, Huddersfield, Yorks. (Feb. 23rd).

SHEEP SCAB:

Cumberland.—Wantendlath Farm, Keswick, Cumberland (Feb. 22nd).

Westmorland.—Eastward, Butterwick and Littlewater, Bampton, Penrith, Cumberland (Feb. 18th); Winter Cragg, Martindale, Cumberland (Feb. 18th).

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POULTRY (STOCK IMPROVEMENT) ADVISORY COMMITTEE

The Minister of Agriculture has agreed that Sir Donald Vandeker should relinquish his chairmanship of this Committee in view of his increased responsibilities as Permanent Secretary of the Ministry

and has appointed Mr. R. H. Franklin, C.B.E., an Under-Secretary of the Ministry, to be the new Chairman.

Three full meetings of this Committee have been held since its inception on January 31st, 1944, the most recent being on February 12th, 1946, but in the meantime a great deal of work has been done by Sub-committees which have been set up to investigate particular problems such as the improvement and extension of the present Accredited Breeders Scheme, the investigation of practical breeding methods and their relation to established scientific findings, the registration of distributors of hatching eggs and day-old chicks, and export and import policy.

The Committee has recently considered an enquiry by U.N.R.R.A. about the feasibility of exporting two million day-old chicks to certain mid-European countries and has recommended that in view of the recent announcement about the world food shortage and the need to use for human food cereals that might otherwise be fed to pigs and poultry, this request should not be implemented. The Ministry has accepted this advice and has informed U.N.R.R.A. that so long as cereals are in such short supply export licences could not be recommended for day-old chicks.

Poultry Advisory Sub-committees of the County War Agricultural Executive Committees have now been set up in every county and have been getting to work on their advisory functions in connection with the poultry industry. A number of resolutions from these Sub-committees on various aspects of poultry livestock improvement and the working of the Accreditation Scheme have been received and referred to the appropriate Sub-committees of the Poultry (Stock Improvement) Advisory Committee for their consideration.

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AUTO-SEXING RHODES

The first pair of auto-sexing R.I.R. (Soesterburg strain) have arrived in this country for breeding experiments. They came by 'plane from Holland recently after preliminary discussions between Dr. A. L. Hagedoorn, Secretary to the Dutch Genetical Society, and Dr. W. P. Blount, Poultry Adviser to the British Oil and Cake Mills, Ltd.

The barred plumage of the homozygous cock is characteristic and has been obtained as a result of the method advocated by Dr. Hagedoorn in his recent book "Animal Breeding" (Crosby, Lockwood & Sons, 15s.). The factor concerned is sex-linked and dominant.

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AGRICULTURAL SCHOLARSHIPS

The Ministry of Agriculture and Fisheries invites applications for the undermentioned scholarships:—

Ten Senior scholarships, tenable at University Departments of Agriculture, or Agricultural Colleges, for degree or diploma courses in an agricultural subject; or at Veterinary Colleges for courses in veterinary science;

Six Extended Junior scholarships (for those who have already held Junior awards), and 60 Junior scholarships, tenable at Farm Institutes or similar institutions, for courses not exceeding one year in duration, in agriculture, horticulture, dairying or poultry husbandry.

The scholarships are open to the sons and daughters of agricultural workmen or of working bailiffs, smallholders and other rural workers whose means and method of livelihood are comparable with those of agricultural workmen, and to persons who are themselves *bona fide* workers in agriculture. The value of the awards is such that neither the recipients nor their parents are normally required to make any contribution towards the cost of the training provided. The usual method of selection is by interview, no written examination being held, but candidates must be able to satisfy the Selection Committee that they are in a position to derive educational benefit from the proposed course of instruction and that they intend to follow an agricultural pursuit on completion of their training. Candidates for Senior or Junior scholarships must have attained the age of 17 and 16 years respectively, by September 30th, 1946.

Full information concerning the scheme and forms of application may be obtained from the Secretary of the Ministry, Block 4, Bickenhall Mansions, Baker Street, London, W.1, or from the Education Offices of County Councils.

The latest date for submitting completed applications is April 30th, 1946.

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THE MEDICAL STUDENT

The Medical Curriculum Committee of the B.M.A. Council has considered the pre-university education of the intending medical student and the curriculum for the first year at the university. The Committee deplored the early specialization in the sciences at school and was of opinion that all university students should continue their general cultural studies, which included the sciences, until they entered the university. The first year at the university should be spent in the further study of the basic sciences in their relation to medicine.

INTER-COLLEGE RUGBY FOOTBALL

R.(D).V.C.—0. R.V.C.—11

A revival of pre-war traditions was seen when this game was played in Edinburgh on the morning of February 23rd. The R.V.C. were overwhelmed by the hospitality of their hosts. Breakfast was provided for the train-weary London team before it proceeded to the pitch at Craiglockhart.

London kicked off in bright sunshine with a stiff cross breeze. Forcing the game to the home team's "twenty-five," they kept them hemmed there for some time. It was not long before Hopkins broke the "Dick's" defence wide open and raced through to score a capital try, which was duly converted by Jones. This early setback roused the Edinburgh team and they carried the game towards their opponents' line. Ding-dong play by the forwards followed until a further try was added by Taylor just before half-time, the fine work in the loose by the London men contributing much towards this. Play in the second half was even more ardently contested, but this did not prevent yet another try being added by Roberts.

The students of the "Dick" turned out *en masse*, with added support from the Edinburgh College of Domestic Science, but in spite of their vocal efforts, the R.V.C. continued undaunted to achieve a very fine victory.

The teams attended the Scotland-Ireland International in the afternoon and returned to spend a very convivial evening in the Edinburgh College, thus, in truly traditional style, rounding off a very excellent day.

London.—Stafford, P. L.; Taylor, B., Hopkins, W., Roberts, H. E., James R. A.; Lloyd-Griffiths, F., Darbishire, H. B.; Pay, T., Lewis, T. R. B., Brown, F. G., Hammond, F. C., Wells, E. A., Morgan, T., Jones, S. M. C., and Gilbert G.

Edinburgh.—Hare, W. C. D.; Lambert, P. S., Kerr, W. J., Jones, R., Jones, E. J.; Thomas, W. U., Henshaw, G. L.; Strachan, J., Loxam, J. G., Davidson, J. D., Simms, I. H., Cowie, J., Edgar, D. G., Fletcher, R. B., and Argo, E.

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Our two international rugby forwards again effectively represented their countries on Saturday. F. W. Deas (Heriot's) ably assisted in the defeat of Ireland by Scotland at Murrayfield by 9 points to 3, while M. R. Steele-Bodger (Cambridge University) was in good form in the England pack which, despite the Welsh win at Twickenham by 3 points to nil, played a fine game.

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It is still necessary for each individual wishing to publish a paper based on his war-time work for the Government to submit it first to the division of the Ministry for which the work was done, so that approval of publication can be obtained. Such submissions will be welcome and will be dealt with speedily.—A. V. Hill in *Nature*.

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Agricultural Research Council.—Mr. Thomas Dalling, Director of the Veterinary Laboratory of the Ministry of Agriculture and Fisheries, has been appointed a member of the Agricultural Research Council.

CORRESPONDENCE

The views expressed in letters addressed to the Editor represent the personal views of the writer only and must not be taken as expressing the opinion or having received the approval of the N.V.M.A.

Letters to the Editor should reach the Office not later than by the first post on Monday morning for insertion in following Saturday's issue.

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ABNORMALLY LARGE CALVES

Sir,—On December 17th, 1941, I was called to attend a cross-bred Friesian heifer in difficulty attempting to deliver her first calf. Examination revealed no abnormal presentation but the foetus was peculiarly immovable, and after one extremely severe pull, with pulley blocks, I suspected an oversize foetus and advised immediate slaughter, which was carried out, and a very large calf was removed and weighed. It scaled 151 lb.

Yours faithfully,

Eden House, Bury Road, Stowmarket. G. S. Muir.

February 18th, 1946.

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Sir,—Let me record the weight of a calf I delivered about three years ago. The calf weighed 152½ lb. It took only about ten minutes to "draw" and was alive until just before delivery. Furthermore, the dam was a heifer and suffered absolutely no after effects.

I understand it is not a record.

Yours faithfully,

12, Severn Street. Welshpool. R. J. A. Swift.

February 18th, 1946.

[*This correspondence is now closed.*—Editor.]